

#4

01/23/02



OIKE

RAW SEQUENCE LISTING

DATE: 01/23/2002

PATENT APPLICATION: US/10/033,269

TIME: 11:30:38

Input Set : A:\BB1446 US NA Seq Listing.txt

Output Set: N:\CRF3\01232002\J033269.raw

ENTERED

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3 <110> APPLICANT: Gutteridge, Steve
4     Harvell, Leslie T.
5     Orozco, Buddy
7 <120> TITLE OF INVENTION: Plant Genes Encoding Pantothenate Synthetase
9 <130> FILE REFERENCE: BB1446 US NA
C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/033,269
C--> 12 <141> CURRENT FILING DATE: 2001-11-13
14 <150> PRIOR APPLICATION NUMBER: 60/247,938
15 <151> PRIOR FILING DATE: 2000-11-13
17 <160> NUMBER OF SEQ ID NOS: 15
19 <170> SOFTWARE: Microsoft Office 97
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 1443
23 <212> TYPE: DNA
24 <213> ORGANISM: Zea mays
26 <400> SEQUENCE: 1
27 ctgctgcac ccaatcccat ttaaatttta tcgtcaacaa ttctgtcttc tcggtttctg 60
28 acttattccg ggcattttt ttttcttgt ttcgagcctg tgagtctgat tccattttga 120
29 cccatggcgg cggcggcggc ggcggttcat gagccggagg tgatccgcga caaggcggcg 180
30 atgcgcgcgt ggtcgcgcgc cgcgcgcgcg gagggaaagg ccgtcgtctt agtccccacg 240
31 atgggcttcc tccacgaggg acacctctcg ctcatctccg cggccgtggc ggccctccgc 300
32 ggccccatcg ccgtcgtcgt ctccatctac gtcaacccca gccagtctgc cccaccgag 360
33 gacctcgcca cctacccctc cgacttcgcc ggcgacctcc gcaagctggc cgccaccggg 420
34 gtcgtcgccg cagtattttg tccccagac ctctacgtcc gcggcagcgc tgatcgcccc 480
35 tccgcgcgcg gcgcgtccgg ggcgcggtg tcttgctgg aggatgcagg tgggcatgcg 540
36 cacgagacgt ggattcgggt ggagcggctg gagaaggggc tgtgcgggag cagcaggcct 600
37 gtcttcttcc gcggcgtggc caccgtggtc gccaaactgt tcaatatcgt ggagccggac 660
38 gtcgccgtgt tcgggaagaa ggattatcag cagtggcgcg tcatttgcg gatggttcgt 720
39 gatctcgatt ttgccataca gatagtgggt tcggaagtag tgcgagaagc tgatggtctt 780
40 gcaatgagct ctgcgaatgt aaatctgtca gaggaggata gaaagaaggc gttatcgatc 840
41 agtagatcgc tgggtggatg tagaaccgcc gccctcagtg gaagcaaccg tagccaagaa 900
42 ataaaagatc aaatagtgcg tacaattaca gaagctggcg gtcaggttga ctatgttgag 960
43 attgtggggc aggaaagctt ggtgcctgtg gagaggatgg accgcccttg tgtaatttgt 1020
44 gtcgcggcat ggtttgaaa ggtcaggcta attgacaaca tcgagatcca tgtagatagc 1080
45 tctactgttt tgtctatctg atgaacgaag atgttttagac acacggcaaa atggcatacc 1140
46 actttctacg tagcagtagc agaccaagaa taaatagcat gatgggctga atctggatag 1200
47 aagaccatga gctcagtget agccattctt gaactgctag aatgcagaga ataagtactt 1260
48 tcacagtttc agtcaagcta aggcagcaca aatgaatctt aggcattctt aaagtactca 1320
49 acacattggg ggaaaaaaga aaggacatta atgactgaat cttcgaagct tgtggttaaa 1380
50 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1440
51 aaa
53 <210> SEQ ID NO: 2
54 <211> LENGTH: 325

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55 <212> TYPE: PRT
56 <213> ORGANISM: Zea mays
58 <400> SEQUENCE: 2
59 Met Ala Ala Ala Ala Ala Val His Glu Pro Glu Val Ile Arg Asp
60   1           5           10           15
62 Lys Ala Ala Met Arg Ala Trp Ser Arg Arg Arg Arg Ala Glu Gly Lys
63           20           25           30
65 Ala Val Ala Leu Val Pro Thr Met Gly Phe Leu His Glu Gly His Leu
66           35           40           45
68 Ser Leu Ile Ser Ala Ala Val Ala Ala Ser Ala Gly Pro Ile Ala Val
69           50           55           60
71 Val Val Ser Ile Tyr Val Asn Pro Ser Gln Phe Ala Pro Thr Glu Asp
72   65           70           75           80
74 Leu Ala Thr Tyr Pro Ser Asp Phe Ala Gly Asp Leu Arg Lys Leu Ala
75           85           90           95
77 Ala Thr Gly Val Val Ala Ala Val Phe Cys Pro Pro Asp Leu Tyr Val
78           100          105          110
80 Arg Gly Ser Ala Asp Arg Pro Ser Ala Ala Gly Ala Ser Gly Gly Ala
81           115          120          125
83 Val Ser Cys Leu Glu Asp Ala Gly Gly His Ala His Glu Thr Trp Ile
84           130          135          140
86 Arg Val Glu Arg Leu Glu Lys Gly Leu Cys Gly Ser Ser Arg Pro Val
87   145          150          155          160
89 Phe Phe Arg Gly Val Ala Thr Val Val Ala Lys Leu Phe Asn Ile Val
90           165          170          175
92 Glu Pro Asp Val Ala Val Phe Gly Lys Lys Asp Tyr Gln Gln Trp Arg
93           180          185          190
95 Val Ile Cys Arg Met Val Arg Asp Leu Asp Phe Ala Ile Gln Ile Val
96           195          200          205
98 Gly Ser Glu Val Val Arg Glu Ala Asp Gly Leu Ala Met Ser Ser Arg
99           210          215          220
101 Asn Val Asn Leu Ser Glu Glu Asp Arg Lys Lys Ala Leu Ser Ile Ser
102   225          230          235          240
104 Arg Ser Leu Val Asp Ala Arg Thr Ala Ala Leu Ser Gly Ser Asn Arg
105           245          250          255
107 Ser Gln Glu Ile Lys Asp Gln Ile Val Arg Thr Ile Thr Glu Ala Gly
108           260          265          270
110 Gly Gln Val Asp Tyr Val Glu Ile Val Gly Gln Glu Ser Leu Val Pro
111           275          280          285
113 Val Glu Arg Met Asp Arg Pro Cys Val Ile Cys Val Ala Ala Trp Phe
114           290          295          300
116 Gly Lys Val Arg Leu Ile Asp Asn Ile Glu Ile His Val Asp Ser Ser
117   305          310          315          320
119 Thr Val Leu Ser Ile
120           325
122 <210> SEQ ID NO: 3
123 <211> LENGTH: 1831
124 <212> TYPE: DNA
125 <213> ORGANISM: Zea mays

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127 <400> SEQUENCE: 3

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128 gcacgagggg aaatttccttg atttccctct ttatcttctg catcccactc ccatttactg 60
129 ttctttgttc cgtttttctaa tgagccaccg cgtcttccct tatctgtgc atcccaatcc 120
130 cttttaaatt ttgtcgtcaa caatttcgtc ttctcggttt ctgacttatt cgggggcatt 180
131 tttttttctt gtttcgagcc tgtgagcctg attccatttt gacctatggc ggcggcggcg 240
132 gttcatgagc cggaggtgat ccgcgacaag gcggcgatgc gcgcgtggc gcgcgcgcgc 300
133 cgcgcggagg gaaaggccgt cgttttagtc cccacgatgg gcttccctca cgaggacac 360
134 ctctcgtctc tctccgcggc cgtggcgggc tccgcgggcc cgtcgcctc cgtcgtctcc 420
135 atctacgtca accccagcca gttcgccccc accgaggacc tcgccacctc cccctccgac 480
136 ttgcgcggcg acctcggaac gctggcgccc accggggtcg tcgccgcagt attttgcccc 540
137 cgggacctct acgtccgcgg cagcgtgac cgccttcccg ccgccagcgc gtccgggggc 600
138 gcggtgtctt gcctggagga tgcagggtgg catgcgcacg agacgtgat tcgggtggag 660
139 cggctggaga aggggctgtg cgggagcagc aggcctgtct tcttccgcgg cgtggccacc 720
140 gtggtcgcca agctgttcaa tatcgtggag ccggacgtcg cgtgttcgg gaagaaggat 780
141 tatcagcagt ggcgcgtcat ttgtcggatg gttcgtgatc ttgattttgc catacagata 840
142 gttggttcgg aggtagtgcg agaagctgat ggtcttgcaa tgagctctcg caatgtaa 900
143 ctgtcagagg aggatagaag gaaggcgtta tcgatcagta gatcactggt ggatgctaga 960
144 accgccacc tcaagtgaag caaccgtagc caagagataa aagatcaaat agtgcggaca 1020
145 attacagaag ctggcggtca ggttgactat gttgagattg tggagcagga aagcttggtg 1080
146 cctgtggaga ggatggaccg cccttgtgta atttgtgtcg cggcatggtt tggaaaggtc 1140
147 aggctaattg acaacatcga gatccatgta gatagctcta ctgtttgtc tatctgatga 1200
148 acgaagatgt ttagacacgg caaaatggca taccactttc tacgtagcag tagcagacca 1260
149 agaataaata gcatgatggg ctgaatctgg atagaagacc atgagctcag tgctagccat 1320
150 tcttgaactg ctagaatgca gagaataagt actttcacag tttcagtcaa gctaaggcag 1380
151 caciaaatgaa tcttaggcac ctctaaagta ctcaacacat tgggggaaaa aagaaaggac 1440
152 attaatgact gaatcttcga agcttgtgat acattccttt aaaaaaaaaa agattttaca 1500
153 ttagcttctc tcgttagtca ccagatgcac tctatagtta ccggaggctc aagggcgctt 1560
154 aaaatctcaa gcatgagcaa tcaatctggc cggacatctt ggttctcaac tgcccattga 1620
155 tacttgattc aagcactctg ccaataacaa aactactcga actccagcag ctccctgtct 1680
156 cgctcactat cttaactcc atgcggtaaa cagtataaaa acagtgtttt gtacatccat 1740
157 atacatgata cgcgaagac ggtctaagg tgcataaatg ttttctctt tttgtgttt 1800
158 taaaaaaaaa aaaaaaaaaa aaaaaaaaaa a 1831

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161 <210> SEQ ID NO: 4

162 <211> LENGTH: 323

163 <212> TYPE: PRT

164 <213> ORGANISM: Zea mays

166 <400> SEQUENCE: 4

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167 Met Ala Ala Ala Ala Val His Glu Pro Glu Val Ile Arg Asp Lys Ala
168 1 5 10 15
170 Ala Met Arg Ala Trp Ser Arg Arg Arg Arg Ala Glu Gly Lys Ala Val
171 20 25 30
173 Ala Leu Val Pro Thr Met Gly Phe Leu His Glu Gly His Leu Ser Leu
174 35 40 45
176 Val Ser Ala Ala Val Ala Ala Ser Ala Gly Pro Val Ala Val Val Val
177 50 55 60
179 Ser Ile Tyr Val Asn Pro Ser Gln Phe Ala Pro Thr Glu Asp Leu Ala
180 65 70 75 80
182 Thr Tyr Pro Ser Asp Phe Ala Gly Asp Leu Gly Lys Leu Ala Ala Thr
183 85 90 95

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185 Gly Val Val Ala Ala Val Phe Cys Pro Pro Asp Leu Tyr Val Arg Gly
186           100           105           110
188 Ser Ala Asp Arg Pro Ser Ala Ala Ser Ala Ser Gly Gly Ala Val Ser
189           115           120           125
191 Cys Leu Glu Asp Ala Gly Gly His Ala His Glu Thr Trp Ile Arg Val
192           130           135           140
194 Glu Arg Leu Glu Lys Gly Leu Cys Gly Ser Ser Arg Pro Val Phe Phe
195 145           150           155           160
197 Arg Gly Val Ala Thr Val Val Ala Lys Leu Phe Asn Ile Val Glu Pro
198           165           170           175
200 Asp Val Ala Val Phe Gly Lys Lys Asp Tyr Gln Gln Trp Arg Val Ile
201           180           185           190
203 Cys Arg Met Val Arg Asp Leu Asp Phe Ala Ile Gln Ile Val Gly Ser
204           195           200           205
206 Glu Val Val Arg Glu Ala Asp Gly Leu Ala Met Ser Ser Arg Asn Val
207           210           215           220
209 Asn Leu Ser Glu Glu Asp Arg Lys Lys Ala Leu Ser Ile Ser Arg Ser
210 225           230           235           240
212 Leu Val Asp Ala Arg Thr Ala Thr Leu Ser Gly Ser Asn Arg Ser Gln
213           245           250           255
215 Glu Ile Lys Asp Gln Ile Val Arg Thr Ile Thr Glu Ala Gly Gly Gln
216           260           265           270
218 Val Asp Tyr Val Glu Ile Val Glu Gln Glu Ser Leu Val Pro Val Glu
219           275           280           285
221 Arg Met Asp Arg Pro Cys Val Ile Cys Val Ala Ala Trp Phe Gly Lys
222           290           295           300
224 Val Arg Leu Ile Asp Asn Ile Glu Ile His Val Asp Ser Ser Thr Val
225 305           310           315           320
227 Leu Ser Ile
228           323
231 <210> SEQ ID NO: 5
232 <211> LENGTH: 1644
233 <212> TYPE: DNA
234 <213> ORGANISM: Eucalyptus grandis
236 <400> SEQUENCE: 5
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238 ccctctccca tccgatecca cgaaattccc ttctttccaa tcccttccgg tgcctcctc 120
239 caatggcggc gcccccaag gagccgctgg tcatcaccga caaggccgag atgcgggagt 180
240 ggtcgaggtc cgcgcggcgc cagggcagga ccatcgccct cgtgcccacc atgggtttcc 240
241 tccacgaggg ccacctgtcc ctgctccggg aggcccgccg ccgcgcccac gccgtcgtgg 300
242 tctcgtctca cgtgaacccc ggccagttcg ccccttcoga ggacctctcg acgtacccat 360
243 ctgattttoga gggcgacctg ggcaagctca gggccgtccc cggcggcgtg gacgtcgtct 420
244 ttcggtccca gaattcttac gactacggtc aacgcgaggt cgggtggtct ggctgtgaga 480
245 gcgataatgg gtcctgtctc tgtttggagg agaagggcat ggggcacgag gctgtggtga 540
246 ggggtggagag gttggagaag ggcattgtcg ggaagagcag gccctgttcc tttcgagggg 600
247 tggccactgt ggtcaccaag ctgttcaaca ttgtggagcc ggatgtgagt gttttcggga 660
248 agaaggatta ccagcagtg cggatcattc ggcggttggt gagtctcttc tattcgaatt 720
249 cgagcatcgg taattcgggt gtggcgggac aaagggtgta agctgagaaa agtacattac 780
250 tcttccaatt tgtatgatag cttgtcttgt cgaatggagt cattgtcagt gcatatgcc 840

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TIME: 11:30:38

Input Set : A:\BB1446 US NA Seq Listing.txt

Output Set: N:\CRF3\01232002\J033269.raw

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251 gtttcggagt tgttggcggg ttttggcggg gactatgact caattggcag agtgggtgga 900
252 ttagatttaa tttgaaaatc tgatggtgtt ttagtcatag gtgaaagatt ctgttctatg 960
253 ctctctggga ggctggttgc taatgatttg gattgctgtt gttcttttga tgttctgctg 1020
254 ccacatatgg agatgcgttt acttcatatt tctgaacaga aagtttgagg ctgcttggct 1080
255 atgaacgtta tttgtggatt gggattttta ctctgttaca actatgttga gtaattcaac 1140
256 atgaggagct tcaacgggtc aagatcttga cttttccata caagtgatag gttctgaggt 1200
257 catgcgagat catgatggcc ttgcgctaag ctacgcgaat gtgcatctct cacctgaaga 1260
258 aagggaaaag gcattgtcca taagcaggtc attgtcaaga gctaaatctg ctgcggaaaa 1320
259 gggtaagtt aactgccaaa atctaaagga ctccgtcacc caagcaatac aggaagctgg 1380
260 tgggaagatt gattatgctg agattgtaga tcaagagagt ttagaggcag ttgaagaaat 1440
261 caggagcccc gtcgtctcct gtgcgccgc ctggtttggg aaggtcaggc tgattgataa 1500
262 catagaaatc aatgtatgaa ggaacacctt tgtgctcgtc atctcatcat gaggaagggt 1560
263 tctctttttc tttctgcttc tgtggcagcc gaaatgactg gtctctgctg gtggcattta 1620
264 cagataaaaa aaaaaaaaaa aaaa 1644

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267 <210> SEQ ID NO: 6

268 <211> LENGTH: 1183

269 <212> TYPE: DNA

270 <213> ORGANISM: Eucalyptus grandis

272 <400> SEQUENCE: 6

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274 cctctcccca tccgatccca cgaaattccc ttctttccaa tcccttccgg tgcctcctc 120
275 caatggcggc gcccccaag gagccgctgg tcatcaccga caaggccgag atgcgggagt 180
276 ggtcgaggtc cgcgcggcgc cagggcagga ccatcgccct cgtgccacc atgggtttcc 240
277 tccacgaggg ccacctgtcc ctgcctcggg aggcccgccg ccgcgcgac gccgtcgtg 300
278 tctcgtctca cgtgaacccc ggccagttcg cccctccga ggacctctg acgtacccat 360
279 ctgatttcga gggcgacctg ggcaagctca gggccgtccc cggcggcgtg gacgtcgtct 420
280 ttcttcccca gaattctttac gactacggtc aacgcgaggt cgggtggctct ggcgttgaga 480
281 gcgataatgg gtccgtgtct tgtttggagg agaagggcat ggggcacgag gcgtgggtga 540
282 ggggtggagag gttggagaag ggcattgtcg ggaagagcag gcccggtgtc ttctgagggg 600
283 tggccactgt ggtcaccaag ctgttcaaca ttgtggagcc ggatgtgagt gttttcggga 660
284 agaaggatta ccagcagtg cggatcattc ggcggttggt gaattctgac ttttccatac 720
285 aagtgatagg ttctgaggtc atgcgagatc atgatggcct tgcgctaagc tcacgcaatg 780
286 tgcattctct acctgaagaa agggaaaagg cattgtccat aagcaggta ttgtcaagag 840
287 ctaaattctg tgcggaaaag ggtcaagtta actgccaaaa tctaaaggac tccgtcatcc 900
288 aagcaataca ggaagctggt gggaagattg attatgctga gattgtagat caagagagtt 960
289 tagaggcagt tgaagaaatc aggagcccc tctctcctg tgtcgccgcc tggtttggga 1020
290 aggtcaggct gattgataac atagaaatca atgtatgaag gaacaccttt gtgctcgtca 1080
291 tctcatcatg aggaagggtt ctctttttct ttctgcttct gtggcagccg aaatgactgg 1140
292 tctctgctcg tggcatttac acgataaaaa aaaaaaaaaa aaa 1183

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294 <210> SEQ ID NO: 7

295 <211> LENGTH: 311

296 <212> TYPE: PRT

297 <213> ORGANISM: Eucalyptus grandis

299 <400> SEQUENCE: 7

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300 Met Ala Ala Pro Pro Lys Glu Pro Leu Val Ile Thr Asp Lys Ala Glu
301 1 5 10 15
303 Met Arg Glu Trp Ser Arg Ser Ala Arg Arg Gln Gly Arg Thr Ile Ala
304 20 25 30
306 Leu Val Pro Thr Met Gly Phe Leu His Glu Gly His Leu Ser Leu Val

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VERIFICATION SUMMARY

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TIME: 11:30:39

Input Set : A:\BB1446 US NA Seq Listing.txt

Output Set: N:\CRF3\01232002\J033269.raw

L:11 M:270 C: Current Application Number differs, Replaced Application Number
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date